3Com® Switch 5500 10/100 Family

DATA SHEET

An integral part of a 3Com Secure Converged Network:

- Advanced stackable switches for the enterprise edge
- Highly resilient 3Com® XRN® Technology stacking architecture, up to eight units high
- Standard and enhanced models for maximum choices
- Highest level of security and converged network features

Key Benefits

Scalability

An enterprise-class, high-end 10/100 Layer 2/3/4 switch portfolio that is stackable to up to eight units high and provides 384 Fast Ethernet ports, with additional Gigabit ports for stacking or uplinks.

Performance

28– and 52–port models deliver switching capacity of up to 12.8 and 17.6 Gbps, respectively, with wirespeed, line-rate performance delivered on all ports.

Flexibility

Standard image (SI) and enhanced image (EI) software give the widest choice of enterprise switch features at an optimal price. EI-models offer Layer 3 Open Shortest Path First (OSPF) routing, patented 3Com® XRN® technology, and IEEE 802.3af Power over Ethernet (PoE)—for advanced support of today's converged networks.

Network-Level Availability

XRN (eXpandable Resilient Networking) technology is a 3Com innovation that enables multiple interconnected and stackable Layer 3 switches to behave as a single management entity.

Automated stack and fabric setup delivers high resiliency and continuous availability without adding to network complexity. Once configured, all switches actively share network loads and routing intelligence and support ultra-fast failover recovery for lost or disconnected switches.

Multilayered Security

These advanced enterprise switches integrate distributed security enforcement and centralized network management features. Access Control Lists (ACLs) help safeguard access to key network resources from unauthorized access and data corruption. User-based authentication and DES 56-bit encryption help secure Layer 3 protocols and management controls, such as SSH and SNMP. IEEE 802.1X RADIUS Network Login and RADIUS Authenticated Device Access (RADA) enforce access control at the network's edge.

Priority for Converged and Business-Critical Traffic

Next-generation features—advanced, policy-based Class of Service/Quality of Service (CoS/QoS), eight priority queues, committed access rates, bandwidth limiting and filtering, and more—identify and prioritize time-sensitive traffic, including voice over IP (VoIP). For assured privacy, switches can be configured to isolate 3Com NBX® and other-vendor VoIP traffic through a voice-dedicated virtual LAN (VLAN).

Unique AC-/DC-Powered Operation

Support for AC- and direct DC-powered operation leverages your existing power schemes in data centers and switching infrastructures. The state-of-the-art Redundant Power System (RPS) is designed to work with the 3Com Switch 5500. This RPS can provide supplemental N+1 power across all PoE ports in the switch, provisioning up to 384 ports with a full 15.4W.

Future-Proof Investment

Standards-based switching—including IPv6 traffic filtering and classification—cabling support, and management features provide a networking solution that maximizes existing IT investment and supports emerging standards.

Powerful, Unified Management

Switches are powered by the 3Com Operating System, the same proven software shared across our premium enterprise products including the 3Com Switch 8800 and 7700 modular families. This consolidates administrative control over the entire switching infrastructure when using 3Com management application software such as 3Com Enterprise Management Suite and 3Com Network Director.

Service and Support

3Com products are backed by 3Com Global Services and authorized partners with demonstrated expertise in network assessment, implementation and maintenance. These services fill resource gaps and help manage enterprise support requirements.

The new 3Com® Switch 5500 family of stackable switches offer the ideal network-edge solution for delivering premium levels of performance, security, and reliability. Their robust features enable the enterprise network to become more future-proof, resilient, standards-based, secure, and converged than ever before.

These workgroup switches run on the 3Com Operating System, an operating system that is shared across our premium enterprise offerings—including the 3Com Switch 8800 and 7700, and 3Com enterprise routers. This allows the management of an entire distributed switching and routing infrastructure from a single CLI or SNMP management platform such as 3Com Enterprise Management Suite or 3Com Network Director. The end result is a more unified network environment and improved edge-to-core visibility and control.

The 3Com Switch 5500 family includes next-generation Layer 2/3/4, Fast Ethernet switches that are ideal for the most demanding wiring-closet applications. They offer flexible and scalable connectivity for a heterogeneous mix of data, voice, video, and other business-critical services and are particularly suited for building highly available and resilient architectures. These Switch 5500 models come with 24 or 48 10/100 ports plus four active SFP-based Gigabit ports.

Standard-image (SI) and enhanced-image (EI) software models provide for the best fit for performance and budget requirements. The 3Com Switch 5500-SI supports robust, resilient stacking up to eight units high. The stack is connected via the built-in SFP-based Gigabit ports that provide plug-and-play hardware detection and automated configuration.

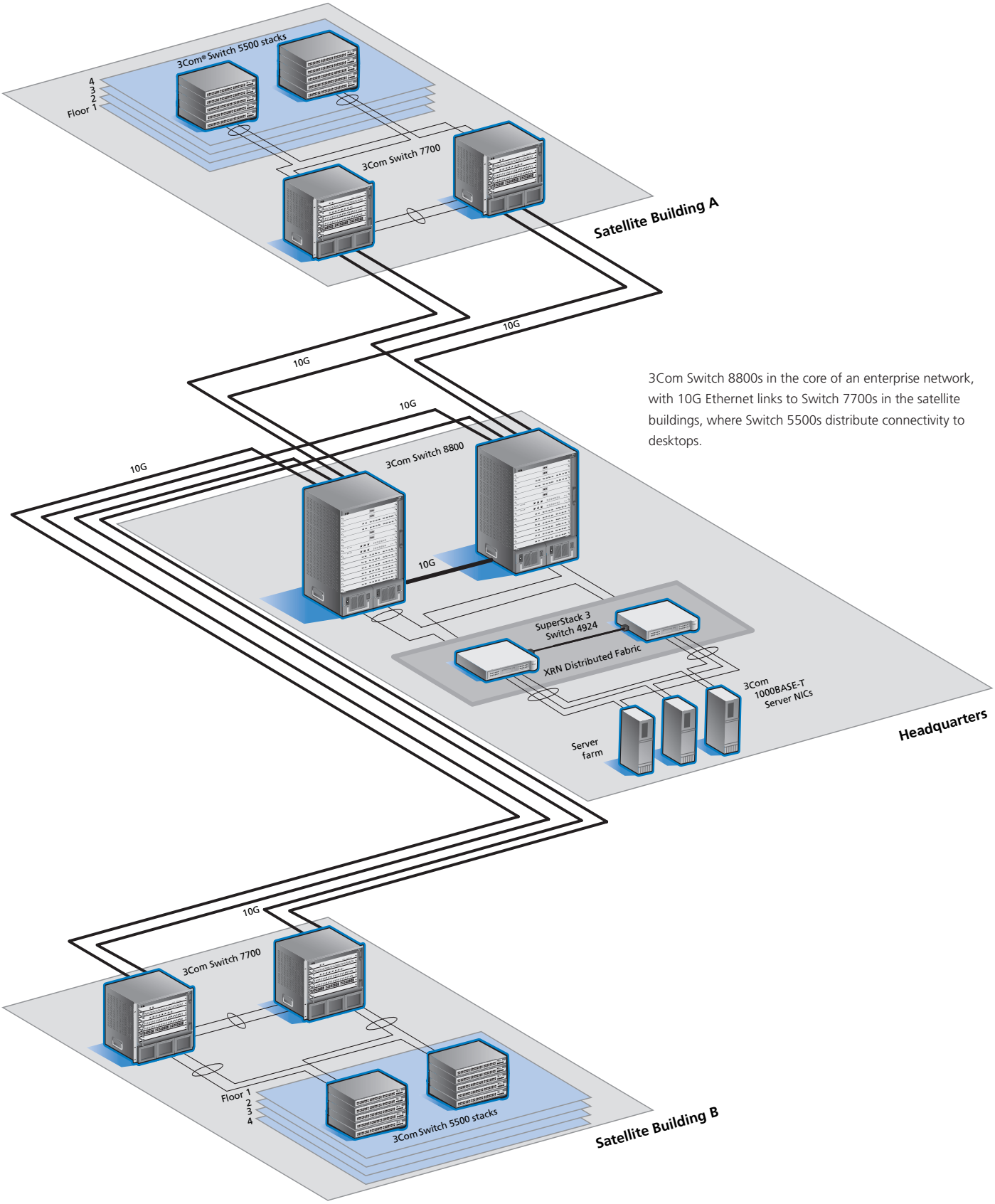
3Com Switch 5500-EI enhanced models support our innovative 3Com XRN stacking technology, which allows the creation of an eight-unit stack that offers even better availability and resiliency over traditional aggregated-trunk configurations. The entire stack can be managed as a single-IP management entity, even if individual units are geographically distributed up to 70 km (43.5 mi) apart. All switch units are active, eliminating the wasted bandwidth and cost of a passive "standby" unit. There is no master/slave relationship among the units. Instead, all switch units share routing table information dynamically. Should a connection fail or unit become disconnected, within seconds, traffic loads are automatically redistributed among the remaining active systems.

Also available as an EI model in the Switch 5500 family is a 100BASE-FX switch ideally suited to applications where security is of particular concern or where long cable runs are required. Fiber optic cabling is almost impossible on which to eavesdrop and thus is ideal for high security environments. The Switch 5500-EI FX 28-Port uses 100BASE-X SFP pluggable transceivers for its 24 connections at 100Mbps, providing the flexibility of running any mix of 100BASE-FX multimode fiber (up to 2 km or 1.2-mi) or 100BASE-LX10 single-mode fiber (up to 10 km or 6.2 mi). The Switch 5500 FX supports all the advanced 5500-EI family features such as Layer 2/3/4 switching and XRN stacking.

Advanced QoS features, including application-aware traffic controls and filtering, optimize network bandwidth for lag-sensitive voice and video transmissions. Centrally controlled security features enable the enforcement of data security across the network, protecting users and devices from unauthorized access and corruption. Advanced Layer 3 routing, such as OSPF, PIM-SM and PIM-DM (EI-models only), and RIP v1/v2, help optimize network performance and system response.

3Com Switch 5500 products are the first stackable workgroup switches to support multiple power schemes right out of the box—AC, AC and DC, or DC operation. Specific EI models also support IEEE 802.3af Power over Ethernet, enabling power to be pushed to the edge of the network without having to install additional electrical wiring or upgrade existing power supplies.

Sample configuration supported by the Switch 8800 Family



3Com Switch 8800s in the core of an enterprise network, with 10G Ethernet links to Switch 7700s in the satellite buildings, where Switch 5500s distribute connectivity to desktops.

Features

PERFORMANCE	
Switching capacity, maximum	52-port models: 17.6 Gbps; 28-port models: 12.8 Gbps
Forwarding rate, maximum	52-port models, 13.1 Mpps; 28-port models, 9.5 Mpps Wirespeed performance across all ports within stack or fabric Store-and-forward switching; latency <10 µs
Stacking bandwidth	2 Gbps full-duplex resilient stacking
LAYER 2 SWITCHING	
MAC address	16K MAC addresses Static MAC addresses: 256 (EI models); 64 (SI models) Jumbo Frame support (EI models only)
VLAN	IEEE 802.1Q VLANs: 4,094 (EI models); 256 (SI models) IEEE 802.1Q Port-based VLANS
Link aggregation	IEEE 802.3ad Link Aggregation Control Protocol (LACP) Manual aggregation, aggregation across units Trunk groups: 26 groups (52-port); 14 groups (28-port) 8 10/100 ports or 4 SFP ports per group
Auto-negotiation	Auto-negotiation of port speed and duplex
Traffic control	IEEE 802.3x full-duplex flow control Back pressure flow control for half-duplex
Spanning Tree/Rapid Spanning Tree	IEEE 802.1D Spanning Tree Protocol (STP) IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) BPDU (Bridge Protocol Data Unit) protection included in Fast Start
Multicast snooping	Internet Group Management Protocol (IGMP) v1 and v2 snooping IGMP Querier Filtering for 256 multicast groups
LAYER 3 SWITCHING	
Routes	Hardware-based routing Static routes: 256 (EI models); 64 (SI models) Dynamic / static ARP (Address Resolution Protocol) entries : 4K / 1K (EI models); 2K / 256 (SI models)
IP routing	IP interfaces: 8 (EI models); 4 (SI models) RIP (Routing Information Protocol), v1 and v2: 2K routes (EI models); 1K routes (SI models) OSPF (EI models only): • Two areas with four virtual interfaces per area • Two neighbors per virtual interface • Two virtual links
Multicast Routing	IGMP v1 and v2 snooping PIM-DM (Protocol Independent Multicast-Dense Mode) (EI models only) PIM-SM (Protocol Independent Multicast-Sparse Mode) (EI models only)
Network protocol	DHCP Relay (Dynamic Host Configuration Protocol Relay): 4 KB max (EI models); 2 KB max (SI models)
Resilience	3Com XRN® Technology (EI models only): • Resilient stacking and fabric links up to 70 km (43.5 mi) • Distributed Link Aggregations, hot-swappable switch units, high-speed trunks up to 2 Gbps • Distributed Resilient Routing, optimized Layer 3 routing, one routing table per switch
STACKING	
Stacking	Eight units, or 384 Fast Ethernet ports Single IP address and management interfaces for stack-wide control Hot-swappable, resilient stacking Distributed stacking over standard media with links up to 70 km (43.5 mi) 3Com XRN Stacking Technology of up to eight units high (EI models only) Distributed Resilient Routing (EI models only) with router tables in all units; no master/slave arrangement

Features, continued

CONVERGENCE	
Priority queues	Eight hardware queues per port
Traffic prioritization	IEEE 802.1p Class of Service/Quality of Service (CoS/QoS) on ingress and egress Remarking of packets based on priority: • Type of Service (ToS) • IEEE 802.1p CoS • IP precedence • Local precedence: physical port, source/destination MAC address, VLAN information, Ethertype, source/destination IP address and port, source/destination TCP/UDP port
Bandwidth management	Webcache redirection helps eliminate redundant WAN traffic (EI models only) Time-based Access Control Lists (ACLs) (EI models only)
Queue handling	Weighted Round Robin Weighted Fair Queuing Strict Priority Queuing
Traffic shaping	Egress rate limiting, port-based Application and protocol blocking
SECURITY	
Network login	IEEE 802.1X user authentication: • RADIUS authentication • Multiple users per port by locking to the MAC address • Automatic port assignment of VLANs and QoS profile based on user • Guest VLAN option • Multiple RADIUS server realm definitions RADIUS Authenticated Device Access (RADA) (EI models only): • Authenticate devices based on MAC address against RADIUS server • Authenticate multiple devices per port • Automatic assignment of VLANs and QoS to a port specific to the devices attached PAP, CHAP, EAPoL (EAP over LAN) authentication, for multiple users per port and 1,024 users per fabric Disconnect Unknown Device (DUD)
Packet filtering	Wirespeed packet filtering in hardware Layer 2/3/4 ACL filters: source/destination MAC address, source and/or destination MAC address, 16-bit Ethertype, source IP address, destination IP Address, TCP source port, TCP destination port, UDP source port, UDP destination port
Switch protocol security	MD5 cipher-text authentication and clear-text authentication for OSPF v2 and RIP v2 packets and SNMP v3 traffic Trusted MAC and IP address Concurrent sessions; four access-privilege levels
Switch management	IEEE 802.1X user authentication Encrypted management traffic, accessible via Secure Shell (SSH v1.5) or SNMP v3 interface Management activity logs recorded and forwarded to central syslog server for detailed analysis Administrative password recovery
MANAGEMENT	
System configuration and management	CLI (Command Line Interface) via the console (control console) port or Telnet Embedded web management interface System configuration with SNMP v1, 2, and 3 RMON (Remote Monitoring) groups: statistics, history, alarm, and events ACL/QoS statistics Comprehensive IP interface statistics and rates Syslog Supports multiple software images and bank swap Configuration migration tool; aids in migration of configuration data from SuperStack 3 Switch 3300, 4200, and 4400 to Switch 5500
Traffic redirection	1-to-1 port mirroring Ability to apply QoS profile to mirror port, forwarding only certain traffic types and preventing over-subscription of copy port Many-to-1 port mirroring (EI models only) VLAN-to-1 port mirroring (EI models only)

Features, continued

MANAGEMENT, *continued*	
System maintenance	Detailed alarm/debug information Supports ping and traceroute Backup and restore of software image Network debugging tools: DHCP tracker, UDP Helper Multiple configuration file support
System file transfer mechanisms	Xmodem FTP (File Transfer Protocol) TFTP (Trivial File Transfer Protocol)
Graphical management	3Com management applications: • 3Com Network Director for comprehensive, turn-key network management for the enterprise. • 3Com Network Supervisor for basic, turnkey network management for small and medium businesses • 3Com Enterprise Management Suite for flexible, extensible management in advanced enterprise IT environments
POWER	
Mode support	AC only, AC and DC, and DC only operation Built-in DC power stage for direct connection to -48 V supply
Power over Ethernet (PoE)	IEEE 802.af PoE pass-through DC power injection into Category 5 or 5e LAN wiring (EI PWR models only)
Redundant Power System (RPS)	Available standards-based DC RPS from leading provider of integrated power systems Provides supplemental DC power injection for 48-port, PoE-compatible models

OPTIONAL SERVICE AND SUPPORT	
Network Health Check	An activity-auditing service focused on improving network performance and productivity Includes traffic monitoring, utilization analysis, problem identification, and asset deployment recommendations Extensive report provides blueprint for action
Network Design	Includes review of business plan, extensive inventory of requirements, and complete design document specifying implementation details
Network Installation	Experts set up and configure equipment and integrate technologies to maximize functionality and minimize business disruption Service may include physical site survey, network design, and engineering based on evaluation of business objectives
Project Management	Provides extra focus and resources that special projects demand 3Com personnel manage entire process from initial specifications to post-project review Using structured methodology, requirements are identified, projects planned, and progress of implementation activities tracked
3Com Guardian℠ Maintenance Service	Provides comprehensive onsite support, including advance hardware replacement, telephone technical support, and software upgrades: • Telephone support backed by powerful call-tracking database and replication laboratory • Software upgrades ensure access to pertinent patches
3Com Express℠ Maintenance Service	Benefits customers who prefer to maintain own hardware
	Bolsters in-house resources with convenient and speedy access to 3Com hardware replacements, software upgrades, and telephone support

Specifications

All information in this section is relevant to all members of the 3Com Switch 5500 10/100 family, unless otherwise stated.

Connectors
24 or 48 auto-negotiating 10BASE-T/100BASE-TX ports configured as auto MDI/MDIX; 4 Gigabit SFP ports

24 or 48 auto-negotiating in-line power 10BASE-T /100BASE-TX ports configured as auto MDI/MDIX; 4 Gigabit SFP ports (PWR models only)

24 SFP ports, to be populated with 100BASE-X SFP transceivers with multi- or single-mode connectors; 2 Gigabit SFP ports; 2 auto-negotiating 10BASE-T/ 100BASE-TX/1000BASE-T ports configured as auto MDI/MDIX (28-port FX only)

Redundant power supply (-48 VDC) connector

RJ-45 console port

Security
RADIUS authentication

RADIUS session accounting

SSH v1.5

IEEE 802.1X network login

Access Control Lists (ACL)

Packet filtering

SNMP v3 encryption

Stacking
Up to 384 10/100 front panel ports

Stack Switch 5500 EI models only with other like units using XRN Technology via SFP ports.

Stack Switch 5500 SI models only with other like units using 'master/slave' via SFP ports.

Performance
28-port
12.8 Gbps switching capacity, maximum

9.5 Mpps forwarding rate, maximum

16,000 MAC addresses supported

52-port
17.6 Gbps switching capacity, maximum

13.1 Mpps forwarding rate, maximum

16,000 MAC addresses supported

Reliability
(MTBF @ 25˚C)

28-port: 53 years (464,000 hours)

28-port PWR: 30 years (263,000 hours)

52-port: 44 years (385,000 hours)

52-port PWR: 21 years (184,000 hours)

28-port FX: 38 years (184,000 hours)

Dimensions
Height: 43.6 mm (1.7 in or 1U)

Width: 440 mm (17.3 in)

Depth:
Non-PWR models: 270 mm (10.6 in)
PWR models: 427 mm (16.8 in or 1U)

Weight:
Non-PWR models: 3.3 kg (7.3 lb)
PWR models: 6.3 kg (13.9 lb)

Power Supply
AC Line Frequency 50/60 Hz

Input Voltage 90-240 VAC

Current Rating:
1.0A maximum

Environmental Requirements
Operating temperature:
0° to 40°C (32° to 104°F)

Storage temperature:
-10° to 70°C (14° to 158°F)

Humidity (operating and storage):
10% to 95% non-condensing

Standard: EN 60068 (IEC 68)

Industry Standards Supported
IEEE 802.1D (STP)

IEEE 802.1p (CoS)

IEEE 802.1Q (VLANs)

IEEE 802.1w (RSTP)

IEEE 802.1X (Security)

IEEE 802.3 (Ethernet)

IEEE 802.3ad (Link Aggregation)

IEEE 802.3ab (1000BASE-T)

IEEE 802.3af (Power over Ethernet)

IEEE 802.3i (10BASE-T)

IEEE 802.3u (Fast Ethernet)

IEEE 802.3x (Flow Control)

IEEE 802.3z (Gigabit Ethernet)

IETF Standards
Management, including MIBs Supported
RFC 1213/2233 (MIB II)

RFC 1253 (OSPF Version 2 MIB) (EI models only)

RFC 1724 (RIP Version 2 MIB Extension)

RFC 1907 (SNMP v2c, SMI v2 and Revised MIB-II)

RFC 2021 (RMON II Probe Config MIB)

RFC 2233 (Interfaces MIB)

RFC 2571 (FrameWork)

RFC 2571-2575 (SNMP)

RFC 2613 (Remote Network Monitoring MIB Extensions)

RFC 2665 (Pause control)

RFC 2668 (IEEE 802.3 MAU MIB)

RFC 2674 (VLAN MIB Extension)

RFC 2819 (RMON MIB)

Emissions / Agency Approvals
CISPR 22 Class A

FCC Part 15 Class A

EN 55022 1998 Class A

ICES-003 Class A

VCCI Class A

EN 61000-3-2 2000, 61000-3-3

Immunity
EN 55024

Safety Agency Certifications
UL 60950

IEC 60950-1

EN 60950-1

CAN/CSA-C22.2 No. 60950-1-03

Management
SNMP and Telnet support

Multiple agents with single management entry point

RMON-1, SMON

RMON Groups: Statistics, History, Alarms and Events

Statistics gathering and reporting

Command line interface

Management through 3Com management applications

- 3Com Network Supervisor

- 3Com Network Director

- 3Com Enterprise Management Suite

Warranty
Limited Lifetime Hardware Warranty, except for fans and power supply, which is 5 Year Limited. Limited Software Warranty for ninety (90) days. See www.3com.com/warranty for details.

Other Benefits
90 days of telephone technical support. Limited software updates.

See www.3com.com/warranty for more detail.

Register products at http://eSupport.3com.com.

Service
Americas:
www.3com.com/products/en_US/global_services

International:
http://emea.3com.com/globalservices

Ordering Information

PRODUCT DESCRIPTION	3COM SKU
3Com Switch 5500-SI 28-Port *24 10/100 ports, 4 active Gigabit SFP ports*	3CR17151-91
3Com Switch 5500-SI 52-Port *48 10/100 ports, 4 active Gigabit SFP ports*	3CR17152-91
3Com Switch 5500-EI 28-Port *24 10/100 ports, 4 active Gigabit SFP ports; 3Com XRN Technology*	3CR17161-91
3Com Switch 5500-EI 52-Port *48 10/100 ports, 4 active Gigabit SFP ports; 3Com XRN Technology*	3CR17162-91
3Com Switch 5500-EI PWR 28-Port *24 10/100 ports, 4 active Gigabit SFP ports; 3Com XRN Technology; Power over Ethernet*	3CR17171-91
3Com Switch 5500-EI PWR 52-Port *48 10/100 ports, 4 active Gigabit SFP ports; 3Com XRN Technology; Power over Ethernet*	3CR17172-91
3Com Switch 5500-EI 28-Port FX *24 100BASE-X SFP ports, 2 active Gigabit SFP ports, 2 10/100/1000 ports; 3Com XRN Technology*	3CR17181-91
Transceivers	
3Com 1000BASE-SX SFP	3CSFP91
3Com 1000BASE-LX SFP	3CSFP92
3Com 1000BASE-T SFP	3CSFP93
3Com 1000BASE-LH SFP	3CSFP97
3Com 100BASE-FX SFP†	3CSFP81
3Com 100BASE-LX SFP†	3CSFP82
Redundant Power System Components‡	
Powerware RPS Rackmount 3 Rectifier System with Load Distribution	APS3-058
Powerware RPS Rackmount 3 Rectifier System with Load and Battery Distribution	APS3-059
Powerware RPS Desktop 3 Rectifier System with Load Distribution	APS3-060
Powerware RPS Desktop 3 Rectifier System with Load and Battery Distribution	APS3-061
Powerware RPS Rackmount 6 Rectifier System with Load Distribution	APS6-058
Powerware RPS Rackmount 6 Rectifier System with Load and Battery Distribution	APS6-059
Powerware RPS 1,500W Rectifier	APR48
Powerware RPS 720W Rectifier	APU48

† Only for use with Switch 5500-EI 28-Port FX, 3CR17181-91.

‡ Available from authorized Powerware resellers. See www.3com.com/rps for details.

Redundant Power System

3Com has tested and qualified a Redundant Power System (RPS) solution designed for the 3Com Switch 5500 by Eaton Powerware Corporation, a leading global provider of power quality and management solutions.

The Powerware DC RPS systems come in either 3RU or 6RU form-factors, delivering up to 9,000W of DC power to a stack of Switch 5500 units. The 3RU unit can house up to three hot-swappable rectifiers supplying up to 4,500W of power, and supports up to eight separately-fused DC outputs, while the 6RU unit can house up to six hot-swappable rectifiers provisioning a total of 9,000W.

The RPS supports SNMP management, including MIB II, which is easily accessible through the built-in RJ-45 or serial port. It is fully compatible with the IEEE 802.3af Power over Ethernet standard, providing supplemental power for the 3Com Switch 5500-EI PWR. With this RPS, all 384 10/100 ports on a stack of eight Switch 5500-EI PWR 52-Port units can receive the industry standard 15.4W of power per port, with N+1 power redundancy.

The RPS ships with the power input fully configured and can be connected to a UPS with battery backup. For more details, please refer to www.3com.com/rps.

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To learn more about 3Com solutions, visit www.3com.com. 3Com is publicly traded on NASDAQ under the symbol COMS.

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